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Remarks

Election/Restriction

The Applicant affirms the election of Claims 1-28, drawn to an adhesive article.

Rejections Under 35 U.S.C.§ 112

Claims 1 and 22-23 are rejected under 35 U.S.C. 112, second paragraph for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

The Examiner alleges that the term "exhibits shrinkage" is both indefinite and infers a method limitation.

The Applicant kindly directs the Examiner's attention to p. 7, lines 1-9 that states, "shrinkage" refers to a sheet or film that exhibits a (1- L/LO) of greater than 0.05% at 10 days according to Shrinkage Test B, as described in further detail in the forthcoming examples.

Accordingly, the term shrinkage is not indefinite as it is clearly defined by the specification. Further, shrinkage is a physical property of a sheet or film and not a method limitation.

The Examiner further alleges that the term "good roll stability" is indefinite. Specifically, the Examiner requested clarification regarding the meaning of a rating of less than 3.

The Applicant kindly directs the Examiner's attention to p. 19 wherein further details concerning the visual roll defects that correspond to each rating is provided.

Claims 11 and 25 have been amended per the suggestion of the Examiner. The Applicants submits that the ordinary chemical meaning of such terms is intended, according heat-stable means "stable", i.e. not easily decomposed or otherwise modified chemically, in the presence of heat.

The Examiner alleges that the phrase "substantially free of photoinitiator" of Claims 14 and 38 is indefinite.

The Applicant kindly directs the Examiner to the top of p. 9 wherein substantially free of photoinitiator is clearly described as having less than 0.1% photoinitiator present after curing.

Rejections Under 35 U.S.C.§ 103

Claims 1-8, 11-14 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/14281 in view of Kessel et al. (U.S. Patent No. 5,432,006). Further, claims 9-10, 15-18 and 21-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/14281 in view of Kessel et al. (U.S. Patent No. 5,432,006) and further in view of Rega et al. (U.S. Patent No. 6,054,208). Accordingly, all the rejections rely on WO 99/14281 (WO '281) as the primary reference.

Claim 1 and dependent claims thereof recite,

"An article comprising an adhesive layer disposed between a substrate and a liner, the liner having an adhesive-facing surface releasably adhered to the adhesive;
wherein the adhesive-facing surface has a coefficient of friction of at least about 0.30;
the substrate exhibits shrinkage;
and the liner exhibits shrinkage ranging from substantially the same as to greater than the substrate."

WO 99/14281 relates to a release liner for use with a pressure sensitive adhesive. The release liner includes a film of thermoplastic elastomeric olefin. The Applicant agrees that WO '281 teaches as article comprising an adhesive layer disposed between a substrate and a liner wherein the liner has an adhesive-facing surface releasably adhered to the adhesive.

Next, however, the Examiner alleges that both the substrate and liner exhibit shrinkage. However, beginning at p. 3, line 29, the reference states, "Also provided by the invention is a method for making a release liner for use with an adhesive applied to a substrate during a heating and cooling cycle. The method involves fashioning a release liner from a material that exhibits

thermal expansion and contraction properties similar to those observed for the intended substrate."

The Examiner has mistakenly concluded that shrinkage is equivalent to thermal expansion and contraction properties.

As described on p. 7, lines 10-12 of the present application for patent, "Shrinkage is different from thermal expansion. Whereas, thermal expansion and contraction is generally reversible at least at lower temperatures; shrinkage is irreversible, a function of time and prevalent at lower temperatures, such as evident during storage."

The Applicants would like to bring to the attention of the Examiner, p. 24, lines 12+ as follows:

"Figure 1 is a plot of L/L_0 (where L is the sample length in mm as a function of temperature and L_0 is the initial sample length in mm) multiplied by 100 versus temperature in °C. Figure 1 shows that Liner 6 exhibited a thermal expansion closest to that of Sheeting 3870, yet Liner 6 exhibited poor roll stability, per Table II. Liner 1 and 2, having a thermal expansion less similar to Sheeting 3870 in comparison to Liner 6, exhibited good roll stability. Accordingly, the data and Figure 1 show that in contrast to the teachings of WO/14281, there was no correlation between thermal expansion and roll stability."

Since the Applicant has demonstrated that there is no correlation between thermal expansion and roll stability, shrinkage in not equivalent to thermal expansion as alleged by the Examiner. Accordingly, WO '281 fails to teach a substrate and a liner that exhibit shrinkage. The Applicant acknowledges that Kessel et al. (U.S. Patent No. 5,432,006) teaches solventless silicone release coating having a coefficient of friction of at least 0.30. (See column 10, Table II, rather than column 9, Table I.) However, since Kessel fails to teach or suggest employing such release coatings on liners wherein the liner exhibit shrinkage and then further employing such liners with substrates the exhibit shrinkage, Kessel fails to overcome the deficiencies of the primary reference, i.e. WO '281.

Claim 21 and dependent claims thereof recite,

"An article comprising a substrate having an encapsulated lens retroreflective viewing surface and an opposing surface, an adhesive layer disposed between said opposing surface of the substrate and a liner, and the liner having an adhesive-facing surface releasably adhered to said adhesive; wherein the adhesive-facing surface of the liner has a coefficient of friction of at least about 0.30."

Rega et al., U.S. Patent No. 6,054,208 teaches aliphatic polyurethane film forming mixtures, image bearing retroreflective sheeting having such image bearing films, and image bearing retroreflective sheeting having such image bearing films. At column 20, an encapsulated-lens sheeting is further described as having an adhesive and silicone coated release liner having its adhesive surface in contact with the exposed surface of the support layer.

The Applicant submits that the coefficient of friction of silicone coated release liner varies. For example, Kessel et al. teaches a solventless silicone release coating wherein some of the compositions have a coefficient of friction of at least about 0.30 and others have a coefficient of friction of less than 0.30 (See Table IV and VI of U.S. Patent No. 5,432,006). Accordingly, although Rega et al. teaches a genus of silicone release coatings, such teaching does not anticipate the species of such release coating having a coefficient of friction of at least 0.30.

Although Kessel teaches a release coating having a coefficient of friction of at least 0.30, there is no suggestion in Kessel or Rega, to employ such release coatings on liners with encapsulated lens retroreflective sheeting.

In order to establish a prima facie case of obviousness these must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the references or to combine reference teachings.

The Applicant submits that the only motivation for combining these references is hindsight based on the Applicants present application for patent. There is no rationale as to why a portion of the release coatings of Kessel would be selected over any other silicone release coating suggested in the art.

The Applicant has responded to all the rejections set forth by the Examiner. Reconsideration and a timely allowance is respectfully requested.

Respectfully submitted,

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Date

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Version Showing Changes Made to the Claims

2. The article of claim 1 wherein the adhesive is a heat-stable adhesive.

25. The article of claim 21 wherein the adhesive is a heat-stable adhesive.